

PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON

CONTRIBUTION TO THE POLYCHAETOUS STUDY
OF THE TULEAR REGION (SW OF MADAGASCAR)

IV. *STHENELANELLA CORALLICOLA* NEW SPECIES
(SIGALIONIDAE)

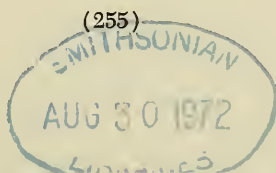
BY BERNARD A. THOMASSIN

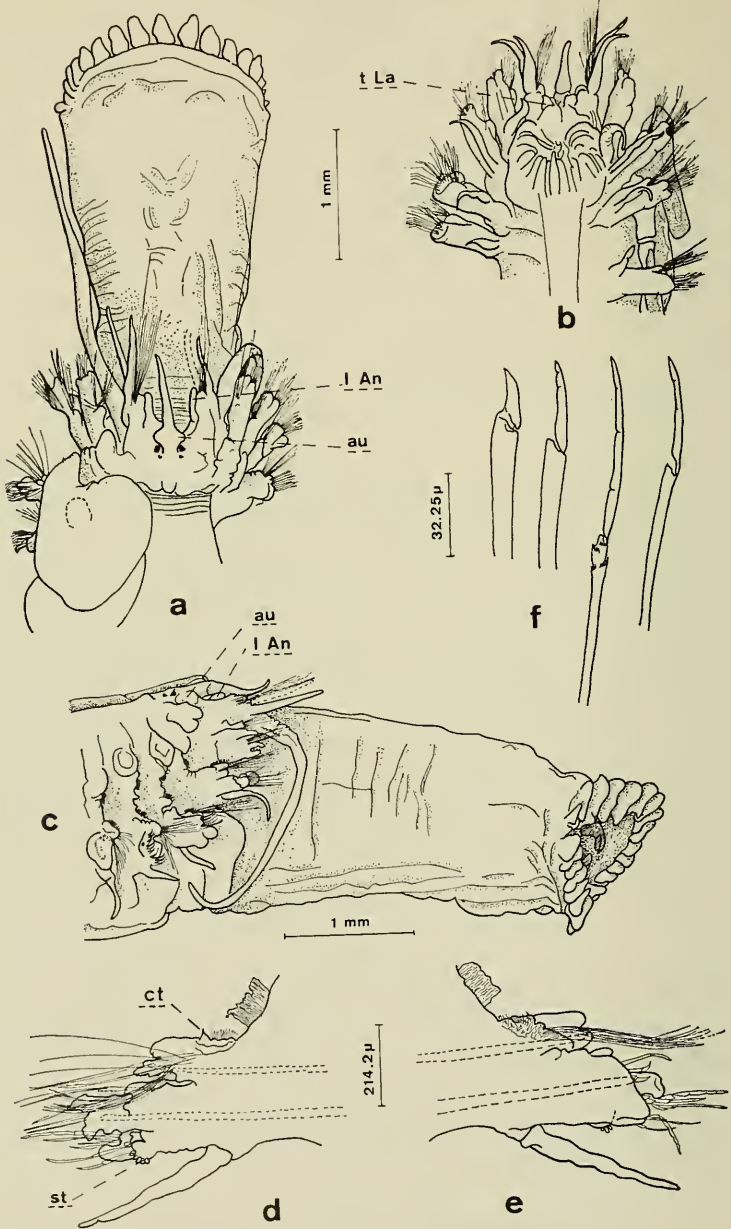
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In the study of some Aphroditidae (*sensu lato*) from the coral sands of the Tuléar region (Thomassin, 1970), I referred some sigalionid polychaetes to *Sthenelanella uniformis* Moore (1910), originally described from California, the one validly described species at that time. Subsequent to the writing of the manuscript, Pettibone (1969) revised the genus *Sthenelanella* Moore, 1910, and synonymized with it the genus *Euleanira* Horst, 1916, represented by a single species, *E. ehlersi* Horst (1916, 1917), originally described from Indonesia (Madura Strait, *Siboga* station 2). The latter species recently was reported by Day (1967) from Natal, South Africa, by Gallardo (1968) from Nha Trang Bay, South Vietnam, and by Gibbs (1971) from New Georgia, Solomon Islands.

In light of the revision by Pettibone, I reexamined my specimens from Tuléar and found that they showed some characters in common with *S. ehlersi* and some with *S. uniformis* but differed in other respects from both species. At my request, Dr. M. H. Pettibone examined some of my Tuléar specimens and concluded that they comprised a new species. She very kindly left it to me to describe. I thank her for this and for her suggestions and help. The manuscript benefited also from the suggestions of Prof. J. -M Pérès, Dr. L. Laubier, and Dr. M. L. Jones.

The types are deposited in the Museum National d'Histoire





Naturelle, Paris (MNHNP), the British Museum (Natural History), London (BMNH), the National Museum of Natural History, Smithsonian Institution, Washington (USNM), and the author's collection (BT), Station Marine d'Endoume.

SIGALIONIDAE

Sthenelanelle Moore, 1910

Synonym: *Euleanira* Horst, 1916.

***Sthenelanelle corallicola* new species**

Figures 1-3

Sthenelanelle uniformis—Thomassin, 1970, p. 64, fig. 10a-i, 4f. Not Moore, 1910.

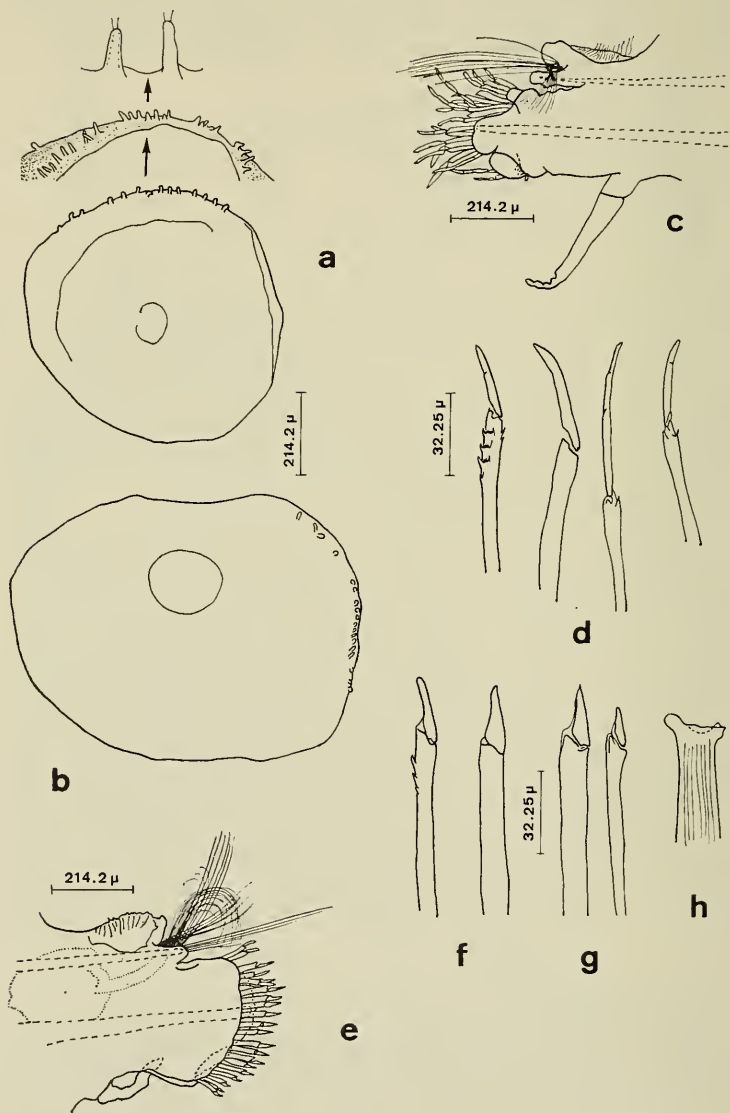
Material examined: MADAGASCAR, Tuléar, coral reef flat of the Great Reef (Grand Récif), collected by B. Thomassin at 11 stations from July 1965 to January 1966—holotype and 30 paratypes : stations 2, 56, 62, 64, 66, 76, 108, 110—8 paratypes (BT) : station 52—7 paratypes (BMNH ZB1971: 32-39); station 80—6 paratypes (USNM 43175); station 113—holotype and 9 paratypes (MNHNP A465).

Description: Body elongate, linear, depressed, tapering posteriorly. Length more than 30 mm (all specimens incomplete), width about 3 mm, including parapodia, segments more than 91. Elytra numerous pairs, on segments 2, 4, 5, 7, alternate segments to 25, continuing on all segments. Elytra delicate, transparent, smooth, not completely covering middorsum; first pair rounded, with numerous cylindrical micropapillae on anterior border, tips of papillae with 1-2 sensory hairs (Fig. 2a); following elytra subreniform to subcordiform, with submarginal fringe of papillae along lateral borders (Fig. 2b). Elytral pigmentation generally lacking; few anterior elytra sometimes with light brown pigmentation.

Prostomium rounded, fused with first or tentacular segment (Fig. 1a-c). Ceratophore of median antenna with small lateral auricles (or basal lappets) and short, tapered style. Lateral antennae very short, oval, fused to inner dorsal bases of tentacular parapodia. Palps long, slender, tapered, emerging ventral to tentacular parapodia and extending to

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FIG. 1. *Sthenelanelle corallicola* (paratypes, from Station 25) : a, Anterior end, dorsal view, pharynx fully extended, elytra on segments II and IV removed, right dorsal tentacular cirrus missing (dotted); b, anterior end, ventral view, palps not shown; c, anterior end, lateral view; d, parapodium from segment II, anterior view; e, same, posterior view; f, neurosetae from same. (au, auricle; ct, ctenidia; 1 An, lateral antenna; st, stylodes or papillae; t La, tentacular lamella.)



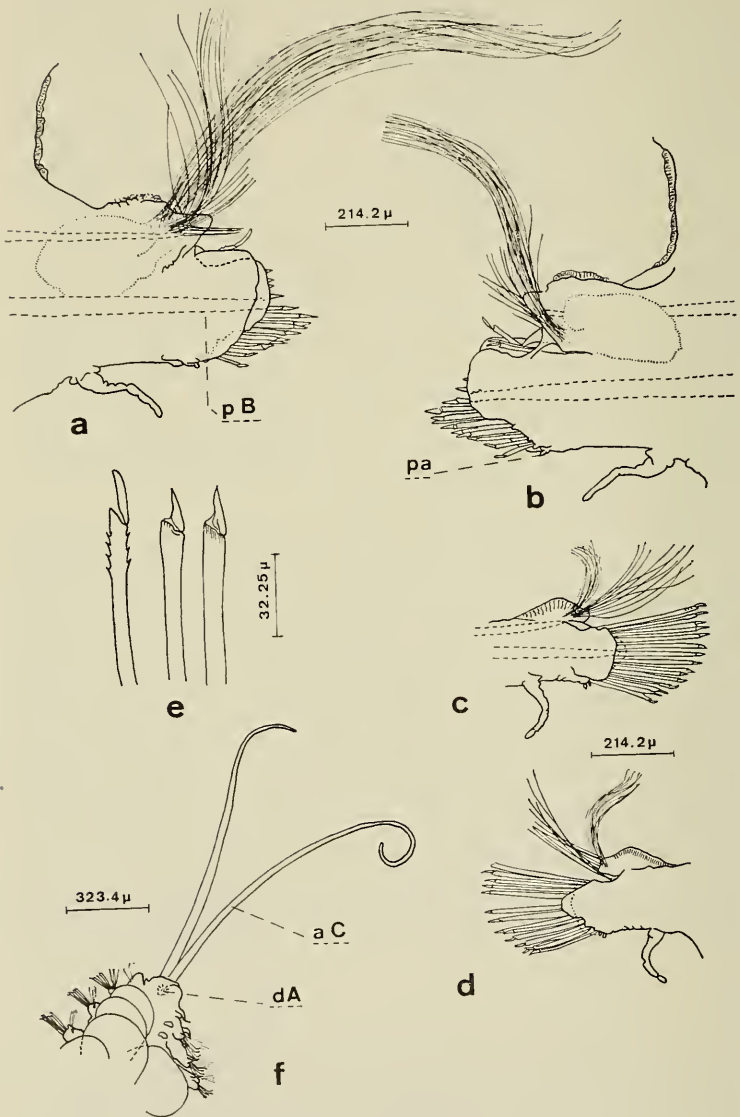
about segment 7 (6-9). Eyes two pairs, brown, each pair closely approximated, situated on slightly raised ocular areas lateral to ceratophore of median antenna, anterior pair about twice as large as posterior pair, partly hidden by auricles. Each tentacular parapodium uniramous, with single aciculum, 2 bundles of capillary notosetae, pair of tentacular cirri similar to median antenna, ventral one slightly shorter than dorsal one, and small elongate-conical tentacular lamella medial to base of tentacular cirri; without dorsal ctenidium.

Parapodia of segments II-IV directed anteriorly; buccal segment (II) with ventral buccal cirri longer than following ventral cirri, similar to ventral tentacular cirri; segment III with conical dorsal tubercles (without dorsal cirri; without extra ctenidia; Figs. 1a-e, 2c). Presetal neuropodial acicular lobes bilobed, with micropapillae (5-6) on distal borders; posterior lobe ending in curved line ventrally. Neurosetae all compound, differing markedly from those of following segments, of several kinds (Figs. 1f, 2d): upper ones with spinous rows (4-8), and blades short to longer, showing 1-4 pseudoarticulations, and entire, slightly hooked tips; middle ones slightly stouter, with smooth stems and short, slightly hooked blades with entire tips; lower ones slender, stems with few spinous rows (2-3), and blades showing 2-4 pseudoarticulations and slender bifid tips, secondary tooth very delicate.

Branchiae short, conical, lateral to dorsal tubercles and elytophores from segment II on. Parapodia (except I) biramous, with rami closely united; ciliated notopodial ctenidia 3 per parapodium, 1 dorsal to notopodium, and 2 in concave area between notopodium and branchia (Figs. 2e, 3a-d). Notopodia bulbous, with projecting acicular lobes on lower sides; notosetae forming loose spreading bundles. All notosetae of anterior region simple, slender, spinous, tapering to capillary tips. Beginning about segment 16 (15-20), additional long, undulating, silky, threadlike notosetae, formed from notopodial spinning glands, emerging from posterior sides of notopodia and extending far beyond usual type of notosetae. Neuropodia larger than notopodia, with subconical presetal acicular lobes, distal part truncate and slightly bilobed in region of tip of neuroaciculum (latter with cup-shaped tip, Fig. 2h), with series of micropapillae on anteroventral part; shorter truncate postsetal lobes. Neurosetae all compound, with blades short and simple; numerous middle ones stouter, with smooth stems and blades tapered to pointed tips (some

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FIG. 2. *Sthenelanelia corallicola* (paratypes, from Stations 52, 113) : a, First elytron, detail showing fringe of anterior papillae; b, middle elytron (about segment 25); c, parapodium from segment III, anterior view; d, neurosetae from same; e, parapodium from segment 20, posterior view; f, neurosetae from same; g, neurosetae from segment 26; h, tip of neuroaciculum from same.



with blades more or less fused to stems); few upper and lower neurosetae more slender, stems with few faint spinous rows and blades slightly curved, with blunt tips (Figs. 2f, g; 3e). Ventral cirri subulate, with small bulbous lobes on outer basal sides and distal articles.

Pygidium with dorsal anus and pair of long anal cirri (Fig. 3f). Extended pharynx elongate, about five times prostomial length (Fig. 1a, c), with 2 pairs of interlocking jaws and about 13 pairs of foliaceous, axe-shaped papillae (13–18 dorsal, 14–16 ventral). Tube up to 8 cm long, tough, fibrous, formed of several layers with bits of embedded coral sand, of greater diameter than animal and forming loose-fitting structure.

Biology: *Sthenelanelle corallicola* is found intertidally and subtidally in coarse sands with some silt, occupying the coral-head ridges with interdigitating sand gullies, in the coarse sand banks on the inner margin of the reef flat, along the lagoon (or postrecifal channel), and in coarse and medium sand on the inner slope of the reef (3 to 6 meters depth, in the lagoon). Medium granular size: $\overline{P_{16}} = 2.30 \pm 0.35$ mm, $\overline{Q_1} = 1.92 \pm 0.29$ mm, $\overline{M} = 1.22 \pm 0.13$ mm, $\overline{Q_3} = 0.77 \pm 0.13$ mm, $\overline{P_{54}} = 0.63 \pm 0.09$ mm, $\overline{\Delta T} = 0.50 \pm 0.04$. The sigalionids form fibrous tubes covered by mucus and embedded vertically in the substrate.

Remarks: *Sthenelanelle corallicola* shows some characters in common with *S. uniformis* and some with *S. ehlersi*, as indicated in Table 1.

It was of interest to determine if the two additional records of *Euleanira ehlersi* from Natal, South Africa (shallow and deep, to 500 meters) by Day (1967), and from Nha Trang, South Vietnam (shallow, sandy-muddy bottoms) by Gallardo (1968) refer rather to *S. corallicola* or to some undescribed species of *Sthenelanelle*.

Professor J. H. Day very kindly lent me one of his specimens for comparison. It agrees with *S. ehlersi* in most respects, including the following: first pair of elytra round, with few scattered sensory papillae on anterior border; second and posterior elytra subreniform; middle elytra with two deep lateral notches, without papillae; elytra on all segments from 25 on (not segment 21, as indicated by Day); dorsal bases of tentacular parapodia with pair of small ctenidia; parapodia of segment III without dorsal cirri, with pair of ventral knobs. The fine hairy setae of the notopodia are extra long, similar to those of *S. corallicola* and *S.*

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FIG. 3. *Sthenelanelle corallicola* (paratypes, from Stations 52, 62, 113) : a, Parapodium from segment 26, anterior view; b, same, posterior view, notopodial hairy setae cut off; c, parapodium from far posterior region, anterior view; d, same, posterior view; e, neurosetae from same; f, posterior end, dorsal view, some elytra removed. (aC, anal cirrus; pa, papillae; pB, posterior bract; dA, dorsal anus).

TABLE 1. Comparison of three species of *Sthenelanelle* Moore (= *Euleanira* Horst).

	<i>S. uniformis</i> Moore, 1910 (Syn.: <i>S. atypica</i> Berkeley & Berkeley, 1941)	<i>S. corallicola</i> n. sp.	<i>S. ehlersi</i> (Horst, 1916)
Type-locality:	Southern California	Madagascar (Tuléar)	Indonésia (Madura Strait)
Elytra on all segments from:	*27 on	25 on	25 on
Pigmentation of anterior elytra:	mottled	colorless or light brown	transversely banded
Lateral margins of middle and posterior elytra:	entire; smooth or with scat- tered micropapillae	entire; with row of submar- ginal micropapillae	*deeply sinuous; without papillae
Oval ctenidia on dorsal bases of tentacular parapodia (I):	absent	absent	*present
Paired dorsal oval ctenidia between segments II and III:	*present	absent	absent

* Differs from two species. (Underlines = characters in common for two species.)

TABLE I. (Continued).

	<i>S. uniformis</i> Moore, 1910 (Syn.: <i>S. atypica</i> Berkeley & Berkeley, 1941)	<i>S. corallicola</i> n. sp.	<i>S. ehlersi</i> (Horst, 1916)
Neuropodia:	subequal rounded presetal acicular and postsetal lobes; without micropapillae	*longer subconical presetal acicular lobes, truncate and slightly bilobed distally, with micropapillae on an- terioventral part; shorter truncate postsetal lobes	subequal rounded presetal acicular and postsetal lobes; without micropapillae (ex- cept on anterior few neuro- podia)
Neurosetae:	*tips of blades of upper ones blunt; rest conical	tips of blades of upper and lower ones blunt; middle ones conical, pointed	tips of upper and lower ones blunt; middle ones conical, pointed

uniformis. Some of the neurosetae have short conical pointed blades, similar to those of *S. corallicola*. My observations agree with Day's identification.

An attempt was made to obtain some of Gallardo's specimens from South Vietnam, now deposited in the Allan Hancock Foundation, without success. The small cushionlike branchiae on the notopodia were referred to as dorsal cirri by Gallardo. Spinning glands were present from about segment 9. It may be pointed out that the segment at which feltage setae first appear is perhaps somewhat variable within a species. The elytra were not described. The figures of the neurosetae resemble those of *S. corallicola*.

Recently, Gibbs (1971) reported two specimens of *Sthenelanella ehlersi*, without additional morphological remarks, from the mud and silty sands (18–24 m depth) of the Marovo lagoon, New Georgia, Solomon Islands.

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